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EXAMINER	
REINIER, BARBARA DIANE	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,579	LOEW, ANDREAS	
	Examiner	Art Unit	
	Barbara D. Reinier	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *1-14,18,19,27,30 and 31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-17,22-26,28,29 and 32-35* is/are rejected.

7)☒ Claim(s) *20,21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/16/2010 have been fully considered but they are not persuasive. With regards to the Applicant's remarks on page 5, paragraphs 3 and 4: the Examiner respectfully disagrees with the Applicant's assessment. The Examiner did note that the "*hue signal of Rai is not **directly** connected to the LUT memory table.*" However, the Examiner maintains that as the claim is written, Rai does anticipate the claimed limitation as stated:

> a converter for generating a hue signal from the color video signals, hue signal connected to inputs of the memories **(hue parameter H for the given pixel is passed to an index generator circuit 1212 shown in Figure 12 and is then connected to the color LUT 1232 shown in Figure 12, col. 29 lines 20-27 & col. 30 lines 15-21 [*the Examiner notes that although the hue signal as shown is not directly connected to the LUT memory table, it would be an obvious variation to have directly made the connection since only a single signal is passed through the index generator where the hue value is used as the index value thereby reducing the circuit complexity*])**;

There is no requirement in the currently presented claims that the hue signal connected to the input of the memories be directly connected. In examining Rai's Figure 12 and disclosure as cited, it is clear that the hue signal which is converted from the input color video signals is the only signal incoming to the index generator 1212 (of Figure 12) and this is then applied to the memories (LUT 1232). The context of the complete disclosure by Rai stating:

> *The hue parameter H for the given pixel is passed to an index generator circuit 1212 that determines whether the pixel occurs within a color correction channel (i.e., hue sector) defined for the color correction block 1100. If the pixel*

> *occurs within a color correction channel defined for the color correction block 1100, the index generator circuit 1212 produces an index number identifying the pixel's color correction channel. If the pixel does not occur within a color correction channel defined for the color correction block 1100, the given pixel passes through the color correction block 1100 without any alteration. Therefore, the color correction block 1100 does not introduce color artifacts into portions of the input video signal 1208 that are not color corrected (col. 29 lines 20-33).*
>
> *The user control interface 1214 also controls the configuration of a color correction look-up table 1232 that includes the coefficients of the T-matrix for the various color correction channels. The index number is passed from the index generator 1212 to the color correction look-up table 1232, which passes the color correction coefficients for the pixel's color correction channel to a T-matrix multiplier array 1234. The T-matrix multiplier array 1234 also receives the input data signal 1208, which includes the input color value (R.sub.in,G.sub.in, B.sub.in) for the given pixel. The T-matrix multiplier array 1234 uses the input color value and the color correction coefficients to compute the unqualified corrected color value (R',G',B') for the pixel. The T-matrix multiplier array 1234 then passes the unqualified corrected color value to the alpha mixer 1230. The mathematics and programmable logic unit circuitry of the T-matrix multiplier array 1234 is shown in FIG. 13B. (col. 30 lines 15-31).*

Rai discloses two correctional paths. And, although the hue components 1216 and 1222 (as indicated by the Applicant on page 6, lines 1-2) are present and the Examiner does agree they do not connect *directly* to the memories, they are not cited nor relied upon to meet the limitations of the present claims because they are components that do not utilize the T-matrix circuit feature of Rai's invention. As stated above and as previously cited and relied upon, the hue signal value via the index generated (where clearly the index value is a function of the hue signal -> index = f(h)) does in fact connect to memories (flow path from RGB -> HSY converter 1210 connected to Index generator 1212 that is connected to color correction look-up table 1232 of Figure 12) when the user control interface is being utilized. Though Rai does utilize the two disclosed components, they are structurally similar with the capability of producing a "signal" where it's applied to the memories.

The Applicant argues that "*the LUT 1232 does not require the hue signal to perform its operation* (page 6, paragraph 1)." The Examiner respectfully disagrees. Rai discloses that each pixel's is assessed whether it's in a hue sector or not (*The hue parameter H for the given pixel is passed to an index generator circuit 1212 that determines whether the pixel occurs within a color correction channel (i.e., hue sector)* , col. 29 lines 20-24). Although the index is provided to the LUTs 1216, 1218 and 1220 when the alpha-circuitry is utilized, it is also provided to the color correction LUT 1232. Therefore, the matrix's function is being affected (controlled) by *a function of hue* of the video signals.

2. In response to applicant's argument that the Examiner is asserting that the user control 1214 produces a hue signal, the Examiner respectfully disagrees. There is no statement in the previous Office Action to the statement. In fact, all references to the hue signal and generation/usage thereof has been with respect to components 1210 and 1212 (shown in Figure 12) and no with respect to component 1214.

3. In response to applicant's argument (page 6 paragraph 2), the Examiner agrees that line 9 of claim 15 does recite "generating a hue signal from the color video signals", there is no limitation that requires the signal presented to the memories be a raw signal (thus not a representative "index" value) nor does it require that signal be the raw signal that is directly connected to the memories. This said, it was the Examiner's opinion (as expressed in the "note" included in the rejection citation of claim 15, that one of ordinary skill in the art could reasonably modify and reduce circuit complexity by eliminating or combining components 1210/1212 with known techniques to yield a predictable

outcome. This assessment was not relied upon but provided and an added explanation for the benefit of the Applicant.

4. In response to applicant's argument (page 6 paragraph 3) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *connection of the hue signal to a matrix*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As presently presented, the hue signal is connected to the memories (claim 15 lines 9-10). There is no requirement in this claim for the above assertion.

5. In response to applicant's argument (page 6 paragraph 3), that "*Rai neither discloses nor suggests applying hue signals generated from color video signals to the matrix's LUT*." As discussed above, the hue signal via its indexed value *is* applied to the LUT 1232 that is subsequently applied to the correctional T-matrix.

6. Applicant's arguments, see page 6, paragraph 4, filed 2/16/2010, with respect to claims 20 and 21 have been fully considered and are persuasive. The 35 USC 102(e) rejection of claims 20 and 21 has been withdrawn.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 15-17, 22-26, 28, 29, 33 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Rai et al (US 6,337,692).

Regarding claim 15: Rai teaches an apparatus **(system)** for correcting color video signals **(col. 1 lines 14-16)**, comprising:

a matrix **(T-matrix, col. 18 lines 24-29)**, through which the color video signals pass to control the proportions of three primary colors in matrixed color value signals **(RGB, col. 17 lines 47-50)**,

means for controlling the matrix as a function of hue of the color video signals **(hue parameter H for the given pixel is passed to an index generator circuit 1212 shown in Figure 12 that determines whether the pixel occurs within a color correction channel, col. 18 lines 2-19, col. 29 lines 20-27 & col. 30 lines 15-21)** respectively, and

means for controlling the matrix as a function of color saturation **(user control interface 1214 shown in Figure 12 also controls the configuration of a color correction look-up table 1232 shown in Figure 12 that includes the coefficients of the T-matrix for the various color correction channels, col. 18 lines 2-4, lines 37-39 & col. 30 lines 15-21)**;

memories for storing information which the matrix uses to control the color value signals **(LUT 1234 of Figure 12)**; and

a converter for generating a hue signal from the color video signals, hue signal connected to inputs of the memories **(hue parameter H for the given pixel is passed to an index generator circuit 1212 shown in Figure 12 and is then connected to the color LUT 1232 shown in Figure 12, col. 29 lines 20-27 & col. 30 lines 15-21 [*the Examiner notes that although the hue signal as shown is not directly connected to the LUT memory table, it would be an obvious variation to have directly made the connection since only a single signal is passed through the index generator where the hue value is used as the index value thereby reducing the circuit complexity*]**);

wherein the matrix comprises nine multipliers and three adders, wherein three of the nine multipliers are connected to one adder, respectively **(as shown by the T-Matrix multiplication circuit 1306 of Figure 13B)**.

Regarding claim 16: Rai teaches an apparatus further wherein the memories store coefficients of the matrix **(LUT 1234 shown in Figure 12 in memory)** that are set as a function of hue of the color video signals **(hue parameter H for the given pixel is passed to an index generator circuit 1212 shown in Figure 12 and is then connected to the color LUT 1232 shown in Figure 12, col. 29 lines 20-27 & col. 30 lines 15-21)**.

Regarding claim 17: Rai teaches an apparatus further wherein the memories store coefficients of the matrix **(LUT 1234 shown in Figure 12 in memory)** correction values

for the coefficients of the matrix **(memory for maintaining the correction LUT, col. 30 lines 15-18)**, wherein the correction values are set as a function of hue of the color video signals **(hue values being supplied to the LUT via the index generator of Figure 12)**.

Regarding claims 22-25: Rai teaches an apparatus wherein the color video signals are provided as color value signals, wherein the converter comprises a converter matrix for generating color difference signals **(RY and BY, col. 10 lines 59-67 – col. 11 lines 1-2)** and a coordinate converter **(col. 25 lines 60-64)**.

Regarding claims 26, 33 and 34: Rai teaches an apparatus wherein one of the memories **(correction values from LUT 1232 of Figure 12)** supplies a correction coefficient to a respective one of the multipliers **(shown in 1232 of Figure 12 supplying coefficients to T-matrix shown in Figure 13B)**.

Regarding claim 28: Rai teaches an apparatus according to Claim 16, further comprising a computer for loading the correction values into the memories, and the means for controlling the matrix having a program on a computer readable medium for setting the correction values **(col. 5 lines 21-28)**.

Regarding claim 29: Rai teaches an apparatus according to Claim 28, comprising a device for the manual setting of the correction values **(user control interface 1214**

shown in Figure 12 also controls the configuration of a color correction look-up table 1232 shown in Figure 12 that includes the coefficients of the T-matrix for the various color correction channels, col. 18 lines 2-4, lines 37-39 & col. 30 lines 15-21).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al (US 6,337,692) in view of Bestmann (US 6,433,898).

Regarding claim 32: Rai does not explicitly teach using logarithmizers connected upstream of the matrix and delogarithmizers connected downstream of the matrix.

Bestmann teaches using logarithmizers connected upstream of the matrix **(col. 2 lines 23-27 & col. 6 lines 41-44)** and delogarithmizers are connected downstream of the matrix **(col. 2 lines 30-31 & col. 7 lines 64-67)**.

Rai and Bestmann are combinable because they are from the field of endeavor in image processing ("*Electronic image processing is composed essentially of the steps of image input, image processing and image output*." Bestmann col. 1 lines 11-13).

At the time of the invention, it would be obvious to one of ordinary skill in the art to refine the image correcting capabilities as taught by Rai by introducing the logarithmic compensation for density as taught by Bestmann.

The motivation to do so would to allow for compensating for various film densities to be taken into consideration when processing the image for output (Bestmann col. 6 lines 33-67 – col. 7 lines 1-67).

Therefore, it would have been obvious to combine Rai and Bestmann to obtain the invention as specified in claim 32.

Regarding claim 35: Rai teaches a correcting color video matrix **(T-matrix, col. 18 lines 24-29)**.

Rai does not explicitly teach where the output signal is configured to limit each color signal to a maximum value governed by a quantization.

However, Bestmann teaches an apparatus according to Claim 15, further comprising three limiters, connected downstream of the matrix **(col. 2 lines 30-31 & col. 7 lines 64-67)** configured to limit each color signal to a maximum value governed by a quantization **(output values determined for a possible value range (interpreted as indicating a minimum and a maximum value), col. 5 lines 10-15 : *Note: the Examiner notes that it is well known that the use of logarithmic circuitry is essentially a high pass, low pass or band pass filter that has particular cut-off frequencies (values) to which the circuit has been tuned to pass or limit*)**.

At the time of the invention, it would be obvious to one of ordinary skill in the art to refine the image correcting capabilities as taught by Rai by introducing the logarithmic compensation for density and output limitations as taught by Bestmann.

The motivation to do so would to allow for compensating for various film densities to be taken into consideration when processing the image for output (Bestmann col. 6 lines 33-67 – col. 7 lines 1-67).

Therefore, it would have been obvious to combine Rai and Bestmann to obtain the invention as specified in claim 35.

Allowable Subject Matter

11. Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 20 and 21 recite the unique feature where "*the converter generates a color saturation signal from the color video supplied to multipliers located in the supply lines of the correction values to the matrix*."

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara D. Reinier whose telephone number is (571)270-5082. The examiner can normally be reached on M-Th, 8am-4pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Haskins L. Twyler can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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